HDA 300

Reference of measurements

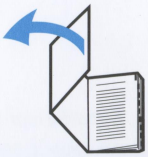
Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany
Test Report Audiometric Headphones HDA 300
Reference no: 1.61 – 4064893/13

Measurement conditions

Temperature: 22 °C
Relative humidity: 50 %

Sensitivity level

	on ear simulator with adapter (plate) and conical ring according to IEC 60318-1:2010*		on 6 ccm coupler according to IEC 60318-3:2010	
Frequency in Hz	Mean value on B&K 4153 in dB re 1 Pa/V	Standard deviation in dB	Mean value on B&K 4152 in dB re 1 Pa/V	Standard deviation
63	34.9	0.58	24.5	1.08
80	35.6	0.75	27.2	0.90
100	36.1	0.58	29.1	0.68
125	36.1	0.88	30.5	0.52
160	37.2	0.40	31.7	0.41
200	38.0	0.31	32.5	0.29
250	38.0	0.67	33.1	0.44
315	38.6	0.77	34.2	0.27
400	38.2	1.03	35.3	0.22
500	37.2	1.05	36.3	0.22
630	35.4	0.75	37.5	0.28
750	33.5	0.61	38.2	0.41
800	32.7	0.53	38.4	0.34
1,000	30.1	0.28	38.8	0.61
1,250	27.5	0.37	37.4	0.62
1,500	25.2	0.26	36.0	0.29
1,600	24.3	0.33	35.3	0.20
2,000	21.1	0.52	33.2	0.58
2,500	20.3	0.54	32.0	0.42
3,000	20.0	0.55	29.7	0.36
3,150	19.8	0.55	29.0	0.29
4,000	16.3	0.46	26.7	0.14
5,000	26.1	0.20	27.0	0.36
6,000	26.4	0.25	28.9	0.54
6,300	26.7	0.36	28.3	0.54
8,000	28.1	1.56	18.4	0.74
10,000	19.4	0.43		
12,000	24.1	0.81		
12,500	20.2	0.68		
14,000	17.5	1.04		
16,000	16.1	0.85		



* Measured with additional adapter ring for a quicker and more accurate positioning on coupler plate of the ear simulator. This is optionally available from Sennheiser.

Reference equivalent threshold sound pressure level (re 20 µPa)

on ear simulator with adapter (plate) and conical ring according to IEC 60318-1:2010

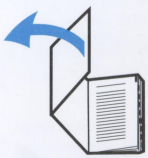
Frequency in Hz	Mean value on B&K 4153 in dB re 1 Pa/V	Standard deviation in dB	Median value *** on B&K 4153 in dB	Interquartile range in dB
125	26.2	3.9	27.0	5.5
250	20.1	3.1	20.0	4.0
500	8.6	4.0	8.0	3.5
750*	5.1		4.5	
1,000	2.7	4.6	2.0	4.5
1,500	3.2	7.1	3.0	6.5
2,000	0.5	4.5	0.0	7.0
3,000	-1.6	6.0	-3.0	7.5
4,000	0.1	5.4	-0.5	5.5
5,000	11.3	4.4	10.5	6.0
6,000	20.9	7.2	21.0	7.5
8,000	23.1	6.1	23.0	6.0
9,000	27.1	5.4	27.5	7.0
10,000	18.5	5.7	18.0	6.0
11,200	22.9	5.6	22.0	8.5
12,500	27.0	5.5	27.0	10.0
14,000	32.8	6.9	33.5	7.5
16,000	47.7	14.4	45.5	12.5

Reference equivalent threshold sound pressure level (re 20 µPa)

on 6 ccm coupler according to IEC 60318-3:2010

Frequency in Hz	Mean value on B&K 4152 in dB re 1 Pa/V	Standard deviation in dB	Median value *** on B&K 4152 in dB	Interquartile range in dB
125	22.3	3.9	23.0	5.4
250	14.7	3.1	14.5	4.0
500	7.4	4.0	6.5	3.5
750*	9.5		9.0	
1,000	11.0	4.6	10.5	4.0
1,500	14.8	7.1	14.5	7.0
2,000	12.3	4.5	12.0	7.0
3,000	8.0	6.0	6.5	7.5
4,000	10.0	5.4	9.5	5.5
5,000	12.3	4.4	11.5	6.0
6,000	23.0	7.2	23.0	7.5
8,000	15.9	6.1	16.0	6.0

* interpolated values
*** rounded to nearest 0.5 dB



Difference between free-field sensitivity level G_F and ear simulator sensitivity level G_C

on ear simulator with adapter (plate) and conical ring according to IEC 60318-1:2010

Frequency in Hz	Mean value on B&K 4153 in dB re 1 Pa/V	Standard deviation in dB	Median value*** on B&K 4153 in dB	Interquartile range in dB
100**	-12.6		-12.0	
125	-12.2	4.4	-12.0	5.5
160*	-11.7		-11.5	
200*	-11.3		-11.5	
250	-10.9	3.9	-11.5	4.5
315*	-10.9		-11.0	
400	-11.0	4.3	-10.0	7.0
500	-7.8	3.5	-7.5	3.5
630*	-5.4		-5.0	
800*	-3.0		-3.0	
1,000	-0.8	3.4	-1.0	3.5
1,250	0.3	4.7	0.0	6.0
1,600	-0.7	3.2	-0.5	5.5
2,000	-2.1	4.0	-2.0	7.0
2,500	-3.0	3.0	-3.0	3.0
3,150	-5.2	3.1	-6.0	4.0
4,000	-5.4	3.3	-4.5	6.0
5,000	-11.7	3.3	-10.5	2.5
6,300	-7.5	3.9	-7.0	6.0
8,000	-10.1	4.5	-10.0	7.0

Difference between free-field sensitivity level G_F and coupler sensitivity level G_C

on 6 ccm coupler according to IEC 60318-3:2010

Frequency in Hz	Mean value on B&K 4152 in dB re 1 Pa/V	Standard deviation in dB	Median value*** on B&K 4152 in dB	Interquartile range in dB
100**	-5.8		-5.0	
125	-5.8	4.4	-5.5	5.5
160*	-5.7		-5.5	
200*	-5.6		-6.0	
250	-5.6	3.9	-6.0	5.0
315*	-6.3		-6.0	
400	-7.1	4.3	-6.0	7.0
500	-5.7	3.5	-5.0	3.5
630*	-7.2		-7.0	
800*	-8.7		-8.5	
1,000	-10.2	3.4	-10.5	4.0
1,250	-11.3	4.7	-11.5	6.0
1,600	-13.4	3.2	-13.5	5.0
2,000	-14.8	4.0	-15.0	5.5
2,500	-15.2	3.0	-15.0	3.0
3,150	-14.6	3.1	-15.5	4.0
4,000	-14.0	3.3	-13.0	6.0
5,000	-13.5	3.3	-12.0	2.0
6,300	-9.2	3.9	-8.5	6.0
8,000	-3.3	4.5	-3.0	7.0

* interpolated values
** extrapolated value
*** rounded to nearest 0.5 dB

Passive attenuation

The attenuation was measured according to ISO 4869-1:1994

Frequency in Hz	Mean value in dB
63	12.5
125	12.4
250	12.7
500	9.4
1,000	12.8
2,000	15.1
4,000	28.8
8,000	26.2

Standards

Headphones comply with:
- IEC 60645-1
- IEC 60645-2
- ANSI S3.6-2010

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